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(54) Title: RNA INTERFERENCE MEDIATED INHIBITION OF GENE EXPRESSION USING MULTIFUNCTIONAL SHORT
INTERFERING NUCLEIC ACID (Multifunctional siNA)

(57) Abstract: [00101] The present invention concerns methods and nucleic acid based reagents useful in modulating gene expres-
sion in a variety of applications, including use in therapeutic, veterinary, agricultural, diagnostic, target validation, and genomic
discovery applications. Specifically, the invention relates to multifunctional short interfering nucleic acid (multifunctional siNA)
molecules that modulate the expression of one or more genes in a biologic system, such as a cell, tissue, or organism via RNA in-
terference (RNAi). The bifunctional short interfering nucleic acid (multifunctional siNA) molecules of the invention can target more
than one regions of nucleic acid sequence in a single target nucleic acid molecule or can target regions of nucleic acid sequence
in differing target nucleic acid molecules. The self multifunctional siNA molecules are useful in the treatment of any disease or
condition that responds to modulation of gene expression or activity in a cell, tissue, or organism.



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